

REMARKS/ARGUMENTS**Claim Rejections 35 USC § 112**

Claims 2-11 and 18 stand rejected under 35 U.S.C. 112 as indefinite.

Claims 2-5 and 18 have been canceled. Independent Claim 6 has been amended to overcome the first rejection of the Examiner under 35 U.S.C. 112 by further specifying the cooperative relationship between the elements. The Examiner also rejected claim 6 on the grounds that certain "essential elements" (e.g., resonate cavity, gain medium, power supply, etc.) were omitted. As stated in MPEP 2172.01 (as cited by the Examiner), this rejection is only proper when a claim omits matter disclosed by the applicant to be essential to the "invention". Applicants have never disclosed or asserted that the specific optical elements identified by the Examiner are essential to the "invention" and indeed, their omission from most of the claims as originally filed is strong evidence that the applicants believed otherwise. This rejection is simply improper and should be withdrawn.

Claim Rejections 35 USC § 103

Claims 2-11 and 18 stand rejected under 35 U.S.C. 103(a) as unpatentable over Shah et al. in view of McMahan and/or Govorokov et al. Claim 6 is the only independent claim remaining in the application.

Applicants' invention as defined in amended claim 6 is directed to solving a problem of protecting optical components of a laser from contamination by particulate matter, water vapor, or organic vapors. The particulate matter may be present in the laser intrinsically or may be generated during operation of the laser by reaction between water or organic vapor with radiation produced by the laser. This problem is described in detail in the Background section of applicant's specification.

Applicant addresses the problem by placing the components to be protected within an enclosure including a gaseous atmosphere and recycling the atmosphere through a gas conditioning apparatus. The gas conditioning apparatus includes a desiccant medium, a medium for trapping organic vapors, and a filter for trapping particulate matter. A pump is arranged to extract gas the enclosure via a first conduit and deliver the extracted gas to the gas-conditioning arrangement via said second conduit. The gas conditioning arrangement is configured such that the extracted gas delivered thereto by the pump passes, in sequence, through the desiccant

medium, the organic vapor trapping medium, and the filter, and is then returned to the enclosure via a third conduit.

Shah et al. is directed to improving air quality in a building during both the heating and cooling seasons. The air recirculating system of Shah includes a water vapor trapping medium, an organic vapor trapping medium and a particulate filter. A pump extracts air from the building and passes the air through the trapping media and the particulate filter. As the examiner notes, this occurs in the same sequence that the laser system atmosphere is passed through the water and organic vapor trapping media and particulate filter of applicant's invention.

In a previous response, applicants noted that the intent in Shah is to maintain the humidity of the building in the range of 40 to 60% while applicants' approach is intended to remove as much of the water vapor as possible. The Examiner responded by citing to column 5, lines 1-40 of Shah, alleging this portion of the specification taught the use of zero water vapor. However, the section of Shah referred to by the Examiner relates to the percentage of water *in the desiccant material*, not inside the building (enclosure). In the Shah system, the treatment module removes water vapor from the air flow. When the desiccant becomes saturated, the air is heated by a furnace and passed through the treatment module in order to draw water out of the desiccant. This saturated air is then vented to the outside. This description in Shah is not intended to specify a humidity level inside the building.

The invention disclosed by MacMahan is directed to solving the same problem to which applicant's invention is directed (see col. 1, lines 35-68). MacMahan addresses the problem by providing an enclosure around optical components to be protected, and connecting that enclosure, via a conduit, to a canister including media (chemical agents) for trapping water and organic vapors. MacMahan teaches (col. 4, lines 3-11) that gases from the enclosure are drawn into the canister by a pumping action due to differential pressure resulting from absorption of the water and organic vapors in the trapping media. MacMahan also teaches that the vapors pass through a screen or the like (particulate filter) **before contacting the trapping media** to prevent particulates from contacting the media. MacMahan does not teach any particular sequence in which the vapors should contact the water vapor trapping and organic media. The apparatus of MacMahan does not recycle the gaseous atmosphere.

Govorokov et al. teaches placing a laser in a sealable enclosure, evacuating the enclosure to remove contaminating vapors, backfilling the enclosure with an inert gas and then sealing the enclosure. The apparatus of Govorokov et al. does not recycle the gaseous atmosphere.

In order to address the outstanding rejection, applicants have cancelled the broader independent claims leaving amended claim 6 as the only independent claim in the application. Claim 6 is specifically directed to a laser having a sealed enclosure containing the optical components of the laser. The claimed gas conditioning system is directed to protecting these components. Both the McMahan and Govorkov references are both related to the art of lasers and are therefore appropriate references upon which the Examiner may rely when forming a rejection under the prior art.

The same cannot be said for the Shah reference. The Shah reference relates to a air quality control system for a building. The intent of Shah is to provide a comfortable environment for those people who live or work in a building. The teachings of Shah have nothing to do with lasers or for controlling the atmosphere in a sealed enclosure in order to protect the delicate optical elements contained therein. At least with respect to claim 6, Shah must be considered non-analogous art and therefore cannot be used to reject claim 6.

As set forth in MPEP 2141.01(a), "In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor [applicant] was concerned." Clearly, Shah is not in the field of applicants' endeavor. More importantly, it is not "reasonably pertinent" to the field which the applicants were concerned. More specifically, the applicants concern was to substantially minimize water, organic vapor and particulates that could harm the optics in a laser enclosure. Shah's concern was to generally condition the air to make it more hospitable to the people in a building. The fact that Shah uses a treatment sequence similar to the applicants is surprising, but it does not mean that one skilled in the art of laser design would look to Shah to determine how to improve laser performance. As also noted in the same section of the MPEP, a reference is only pertinent if "the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem." There is no logic which would influence one skilled in the laser arts to believe that using a system designed to control the air quality in a building would be useful in improving laser performance. This conclusion is further supported by the fact that the Shah approach is to

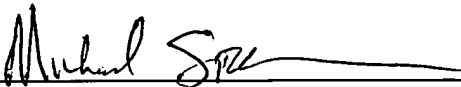
maintain a humidity of 40 to 60% whereas applicants interest would be to maximize water vapor removal.

Assuming Shah is not a proper reference, the Examiner is left with McMahan and Govorkov. Neither of these references, alone or in combination, teach or suggest applicants' invention as defined by amended independent claim 6. Accordingly, it is submitted that amended independent claim 6 defines patentable subject matter and allowance thereof is respectfully requested.

Respectfully submitted,

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